

REMARKS

Claims 1, 12 and 14 have been amended. Claim 13 has been cancelled. Claims 1-12 and 14-24 are pending in this case. Reexamination and reconsideration are respectfully requested.

Claims 12 and 14 were objected to because of minor informalities. These objections have been overcome by minor amendments to the claims as suggested by the Examiner.

Claims 1-5, 7, 8, and 10-15 were rejected under 35 U.S.C. 102 (b) as being anticipated by Yoshikawa et al. (5,691,668). This rejection is respectfully traversed.

The present invention is directed to a dual loop feedforward amplifier, wherein a first feedforward power amplifier serves as a main amplifier gain block for a second feedforward power amplifier. The first feedforward power amplifier comprises a carrier cancellation loop and a first error amplifier loop, and the second feedforward power amplifier comprises a third loop and a fourth loop that cancel small signal distortions that are not reduced by the first feedforward amplifier. A single pilot signal is used to stabilize both feedforward amplifier loops. This is implemented in the preferred embodiment shown in the specification by single pilot source 420 (figure 8) and by providing a stand alone gain and phase stabilized first error amplifier 480 while providing the re-injected pilot signal for use with second error loop 2B and pilot receiver 600.

While Yoshikawa et al. also discloses a dual loop feed forward power amplifier, Yoshikawa et al. requires a use of two pilot sources – first pilot source 51 and second pilot source 52 (see column 6, line 14-16). The two pilot sources are used to control the

inner feed forward amplifier 38 error amplifier 20 path and outer feed forward amplifier 39 error amplifier 21 path as shown in Figure 5 and described in detail in column 6, lines 11- 61. In further reference to Yoshikawa et al., first pilot 51 is injected at first injection device 53. The first level detector 55, placed at the output side of the first feed forward circuit 38, provides a signal to the control circuit 57. Similarly, second pilot 52 is injected at second injection device 54, and second level detector 56, placed at the output side of the second feed forward circuit 39, provides a signal to the control circuit 57. Control circuit 57 provides controls to amplitude control 23 and phase control 27 and amplitude control 25 and phase control 29 so as to minimize the levels of first pilot signal 51 and second pilot signal 52 components. It is obvious to one skilled in the art that elimination of one of these two pilots (51 or 52) would render the Yoshikawa et al. reference completely inoperative, as it would be impossible for control circuit 57 to provide valid control information to the phase control (27 & 29) and amplitude control (23 & 25) elements.

The present invention, as set out in claim 1 as amended, in contrast provides a dual feed forward amplifier wherein only a single pilot source is employed. As noted above Yoshikawa et al. could not function with a single pilot and, therefore, teaches away from the present invention. Accordingly, it is respectfully submitted this rejection is fully traversed by the amendment to claim 1.

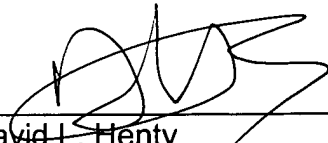
Claims 6 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa (5,691,668). This rejection is respectfully traversed.

This rejection is also clearly fully traversed by the amendment to claim 1 and the above comments.

In view of the foregoing, it is respectfully submitted all claims clearly distinguish the cited references, and the application is in condition for allowance. If any impediment remains to allowance of the application, the Examiner is requested to contact the undersigned by telephone.

Respectfully submitted,

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